(c) No, Sir; indigenous production is progressing as per plan.

(d) Does not arise.

Performance of Launch Vehicles

310. SHRI NARENDRA MOHAN: Will the PRIME MINISTER be pleased to state:

(a) whether it is a fact that launch vehicles are not performing as they were scheduled to perform since August, 1979;

(b) whether these launch vehicles have suffered from under-performance or they have failed at first-stage; and

(c) if so, the reason therefor?

THE MINISTER OF STATE IN THE MINISTRY OF SCIENCE AND TECHNOLOGY AND THE MINISTER OF STATE OF THE MINISTRY OF POWER (SHRI YOGINDER K. ALAGH): (a) to (c) Significant progress has been made in the launch vehicle development in the country since the first flight of Satellite Launch Vehicle-3 (SLV-3) in 1979. Capability of launching satellites has been enhanced from a 40kg payload into low earth inclined orbit in 1979 to 1200 kg Polar Sunsynchronous stellites in 1997.

The launch hisiory of indian launch vehicles is given below:

SI. No.	Launch Vehicle	Satellite	Date of Launch	Launch Wt. (Kg.)
1.*	SLV3-E1	RTP	10.08.79	35.0
2.	SLV3-E2	RS-1	18.07.80	35.0
3.	SLV3-D1	RS-D-1	31.05.81	38.5
4.	SLV3-D2	RS-D-2	17.04.83	41.5
5.*	ASLV-D1	SROSS-I	24.03.87	144.8
6.*	ASLV-D2	SROSS-II	13.07.88	.149.1
7.	ASLV-D3	SROSS C	20.05.92	106.0
8.*	PSLV-D1	IRS-1E	20.09.93	847.0
9.	ASLV-D4	SROSS-C2	04.05.94	U3.0
10.	PSLV-D2	IRS-P2	15.10.94	804.0
11.	PSLV-D3	IRS-P3	21.03.96	922.0
12.	PSLV-C1	IRS-1D	29.09.97	1203.0

'Unsuccessful launches

Launch vehicles cannot be tested completely on ground and a few developmental flights are the only means to characterise all systems behaviour under dynamic environment. It is in these flights the limitations of certain systems come to light. For example, the first SLV-3 flight had shown a problem in the second stage control system; the Second Augmented Satellite Launch Vehicle (ASLV) flight provided a lot of understanding of technical complexities during atmospheric flight; inspitc of most of the system working normally, Polar Satellite Launch Vehicle-Dl (PSLV-D1) could not orbit the satellite; the post flight analysis highlighted the need for smoother transition from second stage to third stage and further qualification of software. On the other hand, in the case of the first ASLV flight, even though no definite reason for the non-ignition, of the core motor could be established, all possible causes were revisited. World over, the experience of various launch vehicles have experienced failures in the initital attempt and is not unique to India.

Today India can launch all its remote sensing satellites by its own launcher, PSLV, which were earlier launched by

foreign launch vehicles. Parllelly, development of Geo-synchronous Satellite Launch Vehicle (GSLV) to launch Indian National Satellite-II (INSAT-II) class of satellites has been under progress. In the first developmental flight is expected in 1998-99. GSLV is expected to be operational by the end of the decade. From then on, it is expected that India will be self-sufficient in launching all its satellites by its own launchers.

WRITTEN ANSWERS TO STARRED QUESTIONS SET FOR THE 19TH NOVEMBER, 1997

Aircraft accidents

*1. SHRI GYAN RANJAN:
SHRI RAM GOPAL YADAV:

Will the Minister of DEFENCE be pleased to state:

(a) whether Government's attention has been drawn to newsitem captioned "Accident rate in IAF becoming cause for concern" published in the Asian Age date 30th June, 1997;

(b) whether the Committee set up under the Chairmanship of Secretary, Defence Research to analyse comparative aircraft accident data, in India and abroad, has since submitted its report; and

(c) if so, what are the main features thereof and what action Government have taken or propose to take on the recommendations of the Committee?

THE MINISTER OF DEFENCE (SHRI MULAYAM SINGH YADAD): (a) and (b) Yes, Sir.

(c) The Committee has made 84 recommendations. These recommendations*The sitting of the Rajya Sabha on Wednesday the 19th November, 1997 wad adjourned without transacting any business. Answers to Questions puyt down in the lists for that day were laid on the Table of the House on Thursday, the 20th November, 1997.

have been made to achieve mfarmise accident rate. Implementation of these recommendations would need changes in organisational structure, procedures, training, design, technology, etc. While some of the recommendations are an in-housc exercise involving negligible financial implications and can be effected by the concerned organisations without much loss of time, implementation/processing of other recommendations will take time and also involve expenditure. The recommendations of the Committee are under examination.

Pak Shelling on Border

"2. SHRI NARENDER MOHAN: Will the Minister of DEFENCE be pleased to state:

(a) Whether it is a fact that during his visit to border area's recently, Pakistani forces started shelling and he had to react on the shelling immediately before the Army;

(b) how many times and 'on how many days Pakistan has shelled Indian villages during the last six months and what are the casualties on Indian side and how Indian Army has retaliated to it; and

(c) whether they have been permitted to retaliate or they were restrained?

THE MINISTER OF DEFENCE (SHRI MULAYAM SINGH YADAD): (a) to (c) The Raksha Mantri visited Siachen Glacier and Kargil on 26/27 September, 1997. While he was at a forward post in Siaclen area, there was firing by Pakistani troops in the nearby area. The concerned An formation responded appropriately. Firing by Pakistani troops in .Siachen area and Line of Control is a routine phenomenon. The Indian Army has been responding adequately to the Pakistani firing.

There are a large number of villages all along the Line of Control and the IB portion of J&K. This year, on two occasions Pakistani troops have specifically targetted Kargil town and adjacent villages in April 1997 and September 1997.

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